Unmounted Diode Laser Chips (UMCs)

780 nm to 830 nm

Based on Coherent's legendary Aluminum-free Active Area (AAA™) epitaxy, Coherent 780-830 nm devices provide unsurpassed reliability and performance. Standard options include 3.5W 100 µm and 7W 200 µm wide emitters. Specifications and options—including power, wavelength, and package design—can be tailored to your demands.

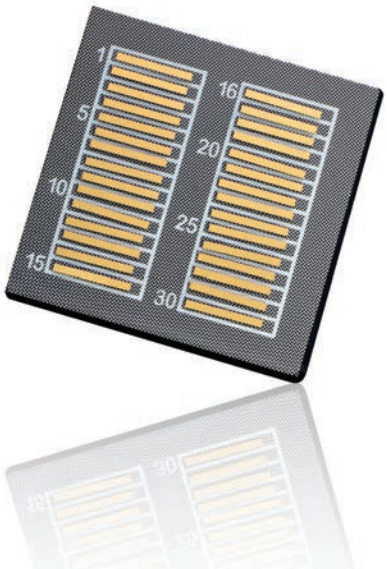
Please contact Coherent to discuss your unique requirements.

FEATURES

- Unique AAA epitaxial technology for highest reliability and lifetime
- High efficiency
- Up to 7W from a 200 µm wide emitter
- Up to 3.5W from a 100 µm wide emitter

APPLICATIONS

- Laser Pumping
- Medical
- Materials Processing
- Illumination



COHERENT®
Superior Reliability & Performance

SPECIFICATIONS[1,2,3,4]	100 µm emitter width 3W 100µm x 2mm	 3.5W 100µm x 2mm
Optical Output Power (W)	3	3.5
Emitter Width (µm)	100	100
Chip Width (µm)	500	500
Cavity Length (mm)	2	2
Shipping/Delivery Configuration	21-emitter chip-bar	21-emitter chip-bar
Centroid Wavelength Available[5] (nm)	780 to 830	780 to 830
Spectral Width, Standard (nm)	<3	<3
Wavelength Temperature Coefficient (nm/°C)	0.28	0.28
Polarization	TE	TE
Fast Axis Divergence (degrees) (FWHM)	31	29
Slow Axis Divergence (degrees) (FWHM)	<10	<10
Threshold Current (A)	0.5 typical	0.5 typical
Operating Current (A)	<3 (2.7 typical)	<3.5 (3.0 typical)
Operating Voltage (V)	<2.0	<2.0
Expected Lifetime (hours) (on a qualified package)	>20,000	>20,000
CHIP BAR PARAMETERS		
Emitter Width (µm)	100	100
Emitter-to-Emitter Pitch (µm)	500	500
Emitter Number	21	21
Cavity Length (mm)	2	2
Chip-Bar Dimensions (mm)	11.5 x 2	11.5 x 2
Chip-Bar Thickness (µm)	135	135

1 Wavelength specifications are based on testing of unmounted bars under low current, low duty cycle, short-pulsewidth test conditions. Contact factory for details.
2 Devices are qualified on a Coherent c-mount operated at full power and 25°C. Customers' results may vary as a function of packaging stress, packaging thermal resistance, operating power, and temperature.
3 Specifications listed here apply at beginning of life. Operating current at end of life is 120% the operating current at beginning of life.
4 Please consult the factory for any requirements not listed, including the following options:
- Centroid wavelength and spectral width requirements other than listed here.
- Optical output powers other than listed here.
- Emitter aperture widths other than listed here.
5 Contact factory for availability.

DELIVERY NOTES:

Unless otherwise specified, unmounted chips are delivered in the form of multi-emitter chip-bars and customer is responsible for cleaving the bar into chips.

OPERATION NOTES:

Negative current transients greater than 25 µA and/or reverse voltages >3V can destroy the device.

SPECIFICATIONS[1,2,3,4,5]	200 µm emitter width 5W 200µm x 2mm*	 7W 200µm x 2mm*
Optical Output Power (W)	5	7
Emitter Width (µm)	200	200
Chip Width (µm)	500	500
Cavity Length (mm)	2	2
Shipping/Delivery Configuration	10 or 11-emitter chip-bar	7-emitter chip-bar
Centroid Wavelength Available[6] (nm)	780 to 830	780 to 830
Spectral Width, Standard (nm)	<3	<3
Wavelength Temperature Coefficient (nm/°C)	0.28	0.28
Polarization	TE	TE
Fast Axis Divergence (degrees) (FWHM)	31	29
Slow Axis Divergence (degrees) (FWHM)	<10	<10
Threshold Current (A)	1.1 typical	1.1 typical
Operating Current (A)	<5.5 (5.0 typical)	<8.5 (8.0 typical)
Operating Voltage (V)	<2.1	<2.0
Expected Lifetime (hours) (on a qualified package)	>20,000	>20,000
CHIP BAR PARAMETERS		
Emitter Width (µm)	200	200
Emitter-to-Emitter Pitch (µm)	500	500
Emitter Number	21	21
Cavity Length (mm)	2	2
Chip-Bar Dimensions (mm)	11.5 x 2	11.5 x 2
Chip-Bar Thickness (µm)	135	135

1 Wavelength specifications are based on testing of unmounted bars under low current, low duty cycle, short-pulsewidth test conditions. Contact factory for details.
2 1W to 7W devices are qualified on a Coherent c-mount operated at full power and 25 deg C. Customers' results may vary as a function of packaging stress, packaging thermal resistance, operating power, and temperature.
3 10W devices are qualified as a full 13-emitter bar packaged on a Coherent conduction cooled bar package. Contact factory for details.
4 Specifications listed here apply at beginning of life. Operating current at end of life is 120% the operating current at beginning of life.
5 Please consult the factory for any requirements not listed, including the following options:
- Centroid wavelength and spectral width requirements other than listed here.
- Optical output powers other than listed here.
- Emitter aperture widths other than listed here.
6 Contact factory for availability.
* Preliminary version.

DELIVERY NOTES:

Unless otherwise specified, unmounted chips are delivered in the form of multi-emitter chip-bars and customer is responsible for cleaving the bar into chips.

OPERATION NOTES:

Negative current transients greater than 25 µA and/or reverse voltages >3V can destroy the device.

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